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REMARKS

Applicants respectfully request reconsideration of the above-identified patent application. Claims 1-49 and 51-55 are pending. Claim 39 is amended to more particularly point out and distinctly claim the subject matter that Applicants regard as the invention. Applicants respectfully traverse the rejections.

I. Invention Summary

The present invention is significantly different from the prior art. Generally speaking, some of the independent claims recite a contactless power supply that have some combination of 1) a variable resonant frequency; 2) a receiver for receiving power usage information from the remote device; and 3) a controller for varying the power supply in response to information received from the remote device. Other independent claims recite a remote device with a secondary that has 1) a variable impedance or a variable inductor; or 2) receives power altered in response to power consumption information.

As defined in independent claim 1, the present invention is directed to a contactless power supply for providing power to a remote device. The contactless power supply includes a resonant circuit, a receiver, and a controller. The resonant circuit has a variable resonant frequency and a primary winding for transferring power to the remote device. The receiver receives information from the remote device. The controller varies the variable resonant frequency in response to information received from the remote device.

As defined in independent claim 5, the present invention is directed to a contactless power supply for providing power to a remote device. The contactless power supply

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includes an inverter, a resonant circuit, a power source and a controller. The inverter has a duty cycle and an operating frequency. The resonant circuit is coupled to the inverter and has a resonant frequency. The resonant circuit has a primary for transferring power to the remote device. The power source is coupled to the inverter and has a rail voltage. The controller varies the rail voltage, the resonant frequency or the duty cycle. The receiver receives power information from the remote device.

As defined in independent claim 15, the present invention is directed to a remote device capable of receiving power from a contactless power supply. The remote device includes a remote device controller and a secondary winding having a secondary winding variable impedance.

As defined in independent claim 23, the present invention is directed to a method of operating a contactless power supply supplying power to a plurality of remote devices, each of the remote devices having power usage information. The method includes receiving the power usage information for each of the remote devices and adapting the contactless power supply in response to the power usage information.

As defined in independent claim 33, the present invention is directed to a contactless power supply for providing power to a remote device. The contactless power supply includes a primary winding for transferring power to a remote device, a receiver for receiving power usage information from the remote device and a controller for changing a variable characteristic of the contactless power supply in response to the power usage information.

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As defined in independent claim 39, the present invention is directed to a remote device for receiving power from a contactless power supply. The remote devices includes a wireless transmitter for sending power consumption information to the contactless power supply.

As defined in independent claim 43, the present invention is directed to a remote device capable of receiving power from a contactless power supply capable of being communicatively coupled to a second device by way of the contactless power supply. The remote device includes a variable inductor for receiving power from the contactless power supply and a transceiver for data communication with the contactless power supply.

As defined in independent claim 48, the present invention is directed to a contactless power supply. The contactless power supply includes an inductive power supply, a transceiver, a communication interface and a communication controller. The inductive power supply inductively energizes a plurality of remote devices and includes a tank circuit with a variable resonant frequency. The transceiver communicates data with the remote devices. The communication interface couples the contactless power supply with a second device. The communication controller manages communication between the second device and the remote devices.

II Art Rejections

1. Anticipation Rejection based on Baraban

As previously presented, claims 39-42 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 7,065,658 to Baraban (“Baraban”). Applicant respectfully traverses this rejection as conceivably applied to the pending claims.

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It is well settled that anticipation can only be established by a single prior art reference that identically discloses each and every element of the claimed invention. Anticipation is not shown even if the difference between the claims and the prior art reference are insubstantial. Instead, the cited reference must show exactly what is claimed. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990); *Structural Rubber Prod. Co. v Park Rubber Co.*, 749 F.2d 707, 223 U.S.P.Q. 1264 (Fed. Cir. 1984).

Baraban is directed to synchronizing and inductively charging a personal digital assistant (“PDA”). Baraban includes an inductive charging system and a wireless communication system. Very little detail is given about the inductive charging system used in Baraban. The extent of the disclosure is that a primary coil resides in an electronic cradle and charges a secondary coil in the PDA. Baraban Col. 2, Lines 31-36. An inductive charging system does not necessarily include a resonant circuit, and certainly does not suggest a resonant circuit with a variable resonant frequency. The wireless communication system “perform[s] data synchronization” and is unrelated to the inductive charging system. Baraban Col. 2, Lines 43-45.

There is no disclosure, suggestion or teaching in Baraban of “sending power consumption information to the contactless power supply” as claimed in independent claim 39. The Office Action relies on descriptions of the Baraban 1) induction charging system¹; and 2) data synchronization capability². Neither of these descriptions discuss sending power

¹ Baraban specifically states that “the portable computer system may be a handheld device and includes a secondary coil of a transformer where the transformer’s primary coil resides in an electronic cradle. The portable computer’s rechargeable battery is recharged through an induction charging system. Baraban Col. 2, Lines 33-36.

² Baraban specifically states that “The PDA is a pocket sized electronic organizer with the capability to store telephone numbers, addresses, daily appointment, and software that keeps track of business or personal data such as expenses, etc. Furthermore, the PDA also has the ability to connect to a personal computer, enabling the two devices to exchange updated information that is synchronizing the information between the two devices.

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consumption information to the contactless power supply. An induction charging system, as described in Baraban, transmits and receives inductive power and need not communicate power consumption information to operate. The data synchronization capability provided by Baraban is with a computer, not a contactless power supply, and is unrelated to the induction charging system. Data synchronization is directed to keeping personal and business information up to date on both a user's PDA and computer. For example, names and telephone numbers can be exchanged between the PDA and computer to avoid having to enter the data more than once. The communication is between the PDA and the computer, not the PDA and the power supply. And, even assuming the communication were between the PDA and power supply, Baraban does not teach communicating the correct kind of data. Baraban discloses transmitting personal or business data, such as names, dates and telephone numbers, not the claimed "power consumption information."

In addition, there is no disclosure, suggestion or teaching in Baraban of "receiving wireless power altered in response to said power consumption information" as claimed in amended independent claim 39. Even assuming that Baraban teaches sending power consumption information to a contactless power supply, it certainly does not teach altering the power in response to the power consumption information.

Because Baraban does not disclose every element of amended independent claim 39, Applicant submits that the Section 102 rejection based on the Baraban reference is overcome and should be withdrawn.

Additionally, the PDA can also be connected to a modem, enabling it to have electronic mail (e-mail) capabilities over the Internet along with other Internet capabilities. Moreover, an advanced PDA can have Internet capabilities over a wireless communication interface (e.g., radio interface)." Baraban Col. 3, Lines 44-59.

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2. Obviousness Rejections Based on Combination of Baraban and Chen

As previously presented, claims 1-38, 43-49 and 51-55 were rejected under 35 U.S.C. 103 as being obvious over Baraban in view of U.S. Patent Application No. 2003/0030342 (“Chen”). Applicant respectfully traverses this rejection as conceivably applied to the pending claims.

Chen is fundamentally different from the present invention. Chen does not appear to include a resonant tank circuit including a capacitor and inductor, instead, Chen is directed to a motorized magnet charging system for cell phone. As seen in Fig. 2 on the next page, the electric motor 420 rotatably drives gear 422a, which in turn drives gear 422b. Gear 422b is coupled to shaft 42, which is rotatably mounted in bearing supports 426. As shaft 424 rotates, a permanent magnet structure 428 also rotates, causing lines of magnetic flux to cross through core 414b of the receiving coil, inducing a current in coil 414a, which is wrapped around the core. The induced current may be used to recharge the cell phone battery.

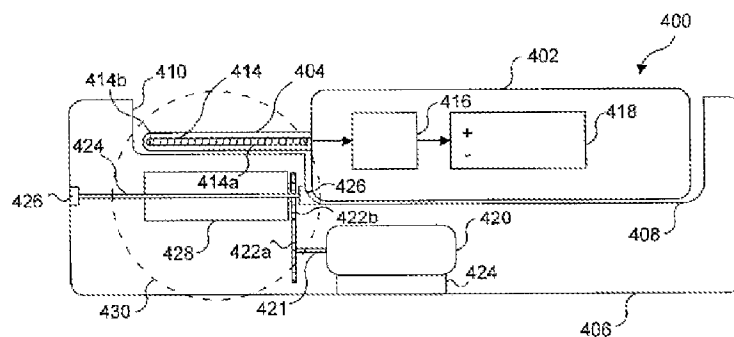


FIG. 2

With respect to independent claim 1, the Office Action held that Baraban discloses, among other things, the claimed “resonant circuit having a variable resonant

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frequency,” but acknowledged that Baraban does not disclose the claimed controller for varying the variable resonant frequency in response to information received from the remote device. Office Action Pg. 2 The Office Action cited Chen for this feature.

With respect to independent claim 15, the Office Action held that Baraban discloses, among other things, the claimed “secondary winding having a secondary winding variable impedance,” but acknowledged that Baraban does not disclose the claimed remote device controller. Office Action Pg. 6. The Office Action cited Chen for this feature.

With respect to independent claim 23, the Office Action held that Baraban discloses, among other things, the claimed step of “receiving the power usage information for each of the remote devices,” but acknowledged that Baraban does not disclose the step of “adapting the contactless power supply in response to the power usage information.” Office Action Pg. 7. Applicants note that the cover sheet of the Office Action lists claim 15 as rejected, but, because no formal rejection appears in the Office Action.

With respect to independent claim 33, the Office Action held that Baraban discloses, among other things, the claimed “receiver for receiving power usage information from the remote device,” but acknowledged that Baraban does not disclose the “controller for changing a variable characteristic of the contactless power supply in response to the power usage information.” Office Action Pg. 8. The Office Action cited Chen for this feature.

With respect to independent claim 43, the Office Action held that Baraban discloses all of the claimed elements except a “variable inductor for receiving power from the contactless power supply.” Office Action Pg. 9. The Office Action cited Chen for this feature.

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With respect to independent claim 48, the Office Action held that Baraban discloses all of the claimed elements except “an inductive power supply for inductively energizing a plurality of remote devices, where the inductive power supply includes a tank circuit having a variable resonant frequency.” Office Action Pg. 10. The Office Action cited Chen for this feature.

Applicants submit that there is no teaching, suggestion, motivation or reason to combine Baraban and Chen. Further, neither Baraban, Chen nor their hypothetical combination disclose all of the elements of any of the independent claims.

A. There is No Motivation to Combine Baraban and Chen

To establish obviousness, there must be some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or combine reference teachings. As combined or modified, the references must suggest or teach *every aspect* of the claimed invention. The teaching or suggestion to make the claimed combination must be found in the prior art, and not based on the Applicants’ disclosure. M.P.E.P. §2.142, citing In re Vaeck, 947 F.2d 488; 20 U.S.P.Q. 2d 1438 (Fed. Cir. 1991). A patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art. KSR International Co. v. Teleflex Inc., 2007 WL 1237837 (U.S. 2007). Further—and particularly relevant here—rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. Id.

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Applicants respectfully submit that no teaching, suggestion, motivation or reason to combine has been identified, and therefore the *prima facie* case of obviousness is improper.

With respect to each of the independent claims, except claim 23, the Office Action states that:

The receiver coil is preferably coupled to a battery disposed in a main body portion of housing, while the receiver coil is disposed in a receiver housing portion of housing (page 6, paragraph [0071-0073; pages 13-14, paragraph 0120-0123]. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Chen to the communication system of Baraban in order to provide a contact less energy transfer apparatus suitable for use with portable consumer devices. Identical citations at Office Action Pgs. 3, 5, 6-7, 8-9, 10 and 11.

The Office Action merely concludes that it would be obvious to combine Chen and Baraban, without articulating any reasoning. The text before the conclusion of obviousness describes the Chen energy transfer system and does not provide any evidence of a teaching suggestion, motivation or reason to combine Chen and Baraban. There is no statement in the Office Action regarding Independent claim 23 whatsoever.

Applicants submit that there is no motivation to combine Chen and Baraban and that Chen teaches away from both Baraban and the claimed invention. The background of the invention section of Chen states that “inductive ... charging systems have drawbacks” and describes the deficiencies of “[i]nductive charging systems [that] include an electromagnetic or radio frequency (RF) coil that generates an electromagnetic field, which is coupled to a receiver coil within the device that includes a battery requiring recharging.” Chen [0007]. Accordingly, Applicants submit that Chen teaches away from the inductive charging systems of both Baraban and the claimed invention.

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B. The Hypothetical Combination of Baraban and Chen Would Not Produce the Claimed Invention.

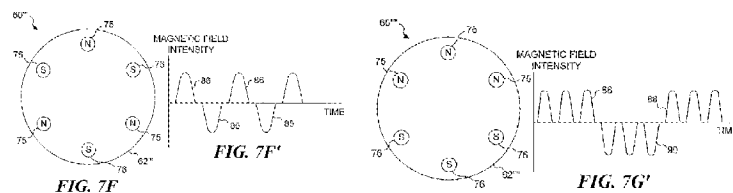
In establishing obviousness under Section 103, the Patent Office carries the burden of presenting a *prima facie* case, *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), and must show that the references relied on teach or suggest all of the limitations of the claims. *In re Wilson*, 424 F.2d 1382, 1385 (C.C.P.A. 1970). Obviousness may not be established using hindsight or in the view of the teachings or suggestions of the inventor. *Par Ordnance Manufacturing, Inc. v. SGS Importers International, Inc.*, 73 F.3d 1085, 37 USPQ2d 1237 (Fed. Cir. 1995), *cert. denied* 117 S. Ct. 80 (1996).

Applicants submit that the hypothetical and impermissible combination proposed in the Office Action would *not* produce a contactless power supply with (i) a “resonant circuit having a variable resonant frequency” or a “tank circuit having a variable resonant frequency” as claimed in independent claims 1 and 48 respectively; or (ii) a “controller for varying the variable resonant frequency in response to information received from the remote device” or “a controller for changing a variable characteristic of the contactless power supply in response to the power usage information” as claimed in independent claims 1 and 33 respectively.

First, neither Baraban, Chen nor their combination teach “variable resonant frequency” in any capacity. As noted above in the anticipation section, Baraban does not suggest variable resonant frequency. A typical inductive charging system does **not** use a variable resonant frequency. Variable resonant frequency does not make sense in the context of Chen’s charging system Chen uses motorized magnets to produce a varying magnetic field. The

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frequency of the magnetic field is not varied in Chen, instead, the intensity of the magnetic field alternates between positive and negative at a **fixed** frequency. Chen discloses several different embodiments (See Figs. 7A-H, 7F and 7G reproduced below) each with magnetic fields of different frequencies, but in each of the embodiments, the frequency remains fixed. Even if Chen disclosed a magnetic field with a variable frequency, it still would not disclose a variable **resonant** frequency as claimed, because there is no discussion of resonance in Chen.



Second, neither Baraban, Chen nor their combination disclose “varying the variable resonant frequency in response to information received from the remote device” or “changing a variable characteristic of the contactless power supply in response to the power usage information” as claimed in claims 1 and 33 respectively. The Office Action admits that Baraban does not disclose this feature, but does not explain how Chen’s varying magnetic field is varied in response to information received from the remote device. After reviewing Chen, Applicants have found no evidence that anything, let alone a variable resonant frequency or variable characteristic of the contactless power supply, are varied or changed in response to information received from the remote device or power usage information. There does not appear to be any communication between the base 406 and the device to be charged 400, only power transfer.

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Applicants also submit that the hypothetical and impermissible modification proposed by the Office Action would *not* produce a **remote device** with a “secondary winding having a secondary winding variable impedance” or a “variable inductor for receiving power from the contactless power supply” as claimed in independent claims 15 and 43 respectively. First, a varying magnetic field is not equivalent to a winding with variable impedance or a variable inductor. Second, the mechanical magnets allegedly act as a primary to produce the varying magnetic field in Chen, the secondary is merely a fixed coil 414. Nothing about coil 414 suggests that it is a variable inductor or has a variable impedance as claimed.

Finally, Applicants submit that the hypothetical and impermissible combination proposed by the Office Action would not teach a method of operating a contactless power supply that includes “receiving power usage information for each of the remote devices” and “adapting the contactless power supply in response to the power usage information” as claimed in independent claim 23. As discussed above, there is no disclosure in Chen or Baraban regarding transmitting power consumption or usage information. Further, as discussed above, there is no disclosure in Chen or Baraban of taking action in response to the power usage information.

C. Dependent Claims

The dependent claims recite additional subject matter not present in the corresponding independent claims, these dependent claims are even more clearly allowable over the art of record than the corresponding independent claims. Specifically, none of the references disclose “a variable impedance element” where “the controller varies the variable resonant frequency by varying the variable impedance” as recited in claim 2. None of the references

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disclose “a variable capacitance” as recited in claim 3. None of the references disclose a controller that “varies the variable resonant frequency in response to power information from the remote device” as recited in claim 4. None of the references disclose that the “controller varies the rail voltage, the resonant frequency or the duty cycle in response to the power information” as recited in claim 7. None of the references disclose a contactless power supply with a “memory” as recited in claim 8. None of the references disclose a transceiver that “communicates” or “receives power information from” a plurality of remote devices as recited in claims 9 and 10 respectively. None of the references disclose a transceiver that “creates a list in the memory of the power information” as recited in claim 11. None of the references disclose a controller that “determines an optimal setting for the rail voltage, resonant frequency or the duty cycle based upon the list” as recited in claim 12. None of the references disclose a “communication interface for communicating with a workstation” as recited in claim 13. None of the references disclose a remote device controller that “is capable of varying the secondary winding variable impedance” as recited in claim 16. None of the references disclose a remote device including “a remote device transceiver for communicating with the contactless power supply” as recited in claim 17. None of the references disclose a controller that “varies the secondary winding variable impedance based upon instructions from the contactless power supply” as recited in claim 18. None of the references disclose a controller that “disables the operation of the remote device based upon instructions from the contactless power supply” as recited in claim 19. None of the references disclose a controller that “enables operation of the remote device based upon instructions from the contactless power supply” as recited in claim 20.

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None of the references disclose a remote device that “has a remote device memory” with “power usage information” as recited in claim 21. None of the references disclose that “the power usage information is communicated to the contactless power supply by way of the remote device transceiver” as recited in claim 22. None of the references disclose that “adapting the contactless power supply includes changing the duty cycle or the inverter frequency” as recited in claim 24. None of the references disclose “adapting the contactless power supply includes changing the resonant frequency of the inverter” as recited in claim 25. None of the references disclose “adapting the contactless power supply includes changing the rail voltage” as recited in claim 26. None of the references disclose “determining whether the contactless power supply is capable of supplying power to the plurality of remote devices” as recited in claim 27. None of the references disclose “disabling at least one of the plurality of remote devices if the contactless power supply is not capable of supplying power to the plurality of remote devices” as recited in claim 28. None of the references disclose adapting the contactless power supply if a new remote device has been added to the plurality of remote devices” as recited in claim 29. None of the references disclose “adapting the contactless power supply if one of the plurality of remote devices is removed from the plurality of remote devices” as recited in claim 30. None of the references disclose “varying the secondary winding variable impedance” as recited in claim 31. None of the references disclose “varying the secondary winding variable impedance is performed as a response to instructions from the contactless power supply” as recited in claim 32. None of the references disclose a “resonant circuit” as recited in claim 34. None of the references disclose “a rail voltage, and the variable characteristic includes the rail voltage” as recited in

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claim 35. None of the references disclose a “resonant circuit” with “a resonant frequency, and the variable characteristic includes the resonant frequency” as recited in claim 36. None of the references disclose. None of the references disclose “the contactless power supply has a duty cycle, and the variable characteristic includes the resonant frequency” as recited in claim 37. None of the references disclose “the contactless power supply has an inverter, and the inverter has an inverter frequency, and the variable characteristic includes the inverter frequency” as recited in claim 38. None of the references disclose the “wireless transmitter comprises an RFID tag” as recited in claim 40. None of the references disclose “the remote device comprises a memory for storing power consumption information” as recited in claim 41. None of the references disclose “the remote device comprises a controller” as recited in claim 42. None of the references disclose “a controller for adjusting the variable inductor” as recited in claim 44. None of the references disclose that “the remote device” includes “a memory” as recited in claim 45. None of the references disclose that “the inductive power supply has an inverter” as recited in claim 49. None of the references disclose that the “inverter has an inverter frequency and an inverter duty cycle” as recited in claim 51. None of the references disclose that the “inductive power supply has a rail voltage” as recited in claim 52. None of the references disclose that “the inductive power supply has a circuit sensor” as recited in claim 53. None of the references disclose “a controller capable of changing the resonant frequency, the inverter frequency, the rail voltage or the inverter duty cycle” as recited in claim 54. None of the references disclose a controller “capable of changing the resonant frequency, the inverter frequency, the rail voltage or

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the inverter duty cycle in response to information from the plurality of remote devices” as recited in claim 55.

III. Conclusion

It is respectfully submitted that the subject matter of the amended claims is not anticipated by the art of record and that any attempt to reconstruct the subject matter of the amended claims through a combination of prior art references can only be made in hindsight with the present invention as a blueprint. However, even such an improper combination does not teach or suggest the present invention for the reasons noted above. It is therefore respectfully submitted that the rejection under 35 U.S.C. § 103 are unfounded or overcome, and therefore should be withdrawn.

In view of the above amendments and remarks, it is respectfully submitted that the present application is in condition for allowance. A notice to that effect is earnestly and respectfully requested.

Respectfully submitted,

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